

Work Order ID 162115

Friday, May 26, 2017 10:07:46 AM

646.3810

B162115

162115

Page 1

Item ID: 646.3810

Revision ID:

Item Name: Bracket

Start Date: 5/26/2017 Start Qty: 20.00

Required Date: 5/26/2017 Req'd Qty: 20.00

Reference:

REV. N/C

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

20

20

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
646.3800	N/C								

110

0.00

110

Mill Conv

Conventional Milling Machine

HAAS CNC VERTICAL MACHINING #1

Memo

3.20

1-Machine per DWG

DWG REV: _____

2- deburr and break all sharp edges

see w/o 154964

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Quality Control

Memo

0.20

N/A

Work Order ID 162115

Friday, May 26, 2017 10:07:46 AM

162115

Page 2

Item ID: 646.3810

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Bracket

Start Date: 5/26/2017 Start Qty: 20.00

20

Cust Item ID:

Required Date: 5/26/2017 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.40

Quality Control

20 ϕ 49
9-89
17/05/26

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

3,600.00

Outsource process - Anodize

Issue P/O to ATG : 36731

1- Black Anodize as per Dwg 646.3800

2- PRIME AS PER DWG, SEE NOTE #2

Certification of Conformity is required

20 JUN 16 2017
DAS
13
9-09

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.40

Packaging

20 x SP17-7-25

Work Order ID 162115

Friday, May 26, 2017 10:07:46 AM

162115

Page 3

Item ID: 646.3810 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bracket
 Start Date: 5/26/2017 Start Qty: 20.00 ***20*** Cust Item ID:
 Required Date: 5/26/2017 Req'd Qty: 20.00 ***20*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
155	QC5- Inspect part completeness to step on W/O	0.00							DAS 38 9-89
155						20			
QC	Memo	0.40							
Quality Control	3.2 mils thickness primer								JUL 26 2017
180	Identify as per dwg & Stock Location: CLK/08A 100	0.00							DAS 6 9-89
180									
Packaging	Memo	0.20							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	2.00							
Quality Control									17/7/28 20

(Signature)

UM 7/27/17

Picklist Print

Friday, May 26, 2017 10:07:45 AM

Page 1

Work Order ID: 162115

162115

Parent Item: 646.3810

646.3810

Parent Item Name: Bracket

Start Date: 5/26/2017

Required Date: 5/26/2017

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP REV:A NEW ISSUE 12-10-22 JLM VERIFIED:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6A1.00X0.75X 0.125X0.060		Purchased	No			110	f	116.2961	0.1375	2.75			

*M7075T6A1 00X0 75X0 125X0

**

7075T6 ANGLE 1.0" X .75" X .125" X .060"W

Location

Loc Qty

Loc Code

MAT051

116.2961

123947

7.7541

m137084

108.542

See w/o 154964 u
metal pulled
w/o was
costed

Work Order ID 154964 - 2

Wednesday, January 04, 2017 11:33:53 AM

154964

Page 1

Item ID: 646.3810

Revision ID:

Item Name: Bracket

Start Date: 1/9/2017

Required Date: 1/16/2017

Reference:

Accept

N900040100

Setup Start

NS1

Stop

NS2

Start Qty: 5.00 *5*

Req'd Qty: 5.00 *5*

Cust Item ID:

Customer:

Approvals:

Process Plan:

DAC

21

9-89

Date:

JAN 04 2017

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

646.3800

N/C

110

0.00

110

Mill Conv

Conventional Milling Machine

HAAS CNC VERTICAL MACHINING #1

Memo

0.17

1-Machine per DWG
DWG REV: *AK*

2- deburr and break all sharp edges

20

0

BA 14-03-21
17-03-21
FB

120

0.00

120

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.01

20

0

BA 17-03-21
17-3-21
FB

PTO

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>154964</u> Part No. <u>646.3810</u> NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☒</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																				
Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																				
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																				
Large Fab ☐	Composite ☐	Supplier ☐																					
Date: <u>17-03-</u>		Step #: <u>110</u>		QTY Effective: <u>20</u>		MRB (QSI042) Approval																	
Description Work Order Deviation				Disposition																			
Dimension R0.06 is R0.125 on 20 parts				<u>See e-mail attached</u>				Completed By <u>21.03.17</u> 															
								Lead hand / Supervisor Approval Verification															
				QC / QA Coordinator Approval																			

Root Cause		FAULT CATEGORY			
Environment ☐	☒ No Re-verification ☒ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due	Pressure/Forced Bending Centre Not Concentric Cracks Crimp/Kink/Ripple/Wave Cuffs Crushing Heat Treat Wave/Twist in Tube Marks/Chatter	Temperature/Cure Set-up BOM/Route Broken/Damage/Defect Inspection Incomplete/Unqualified Contamination Countersink Cut Too Short Instructions Incomplete/Unclear Drill Holes	Power Loss/Surge Folio/Program Grain Weld Wrong Stock Pulled Out of Sequence Off-set Mislabeled Fit/Function Misaligned/off center	Positioned Wrong Outside Dimensions ☒ Over/Under tolerance Part Incorrect Part Lost/Missing Part Moved Drawing Finish Misread Turning Sequence
Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		OTHER: _____			

Work Order ID 154964***154964***

Page 2

Wednesday, January 04, 2017 11:33:53 AM

Item ID: 646.3810

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Bracket

Start Date: 1/9/2017 Start Qty: 5.00

5

Cust Item ID:

Required Date: 1/16/2017 Req'd Qty: 5.00

5

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.02							
Quality Control									
140	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
140									
Outsource4	Memo	149.99							
Outsource process - Anodize	Issue P/O to ATG : _____								
	1- Black Anodize as per Dwg 646.3800								
	2- PRIME AS PER DWG, SEE NOTE #2								
	Certification of Conformity is required								
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.02							
Packaging									

see w/o 162115

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																		
Description Work Order Deviation				Disposition			Completed By																		
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

Work Order ID 154964***154964***

Page 3

Wednesday, January 04, 2017 11:33:53 AM

Item ID: 646.3810 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket
Start Date: 1/9/2017 Start Qty: 5.00 ***5*** Cust Item ID:
Required Date: 1/16/2017 Req'd Qty: 5.00 ***5*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.02							
Quality Control									
180	Identify as per dwg & Stock Location: _____	0.00							
180									
Packaging	Memo	0.01							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.08							
Quality Control									

See w0162115

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval			
Description Work Order Deviation				Disposition				Completed By			
Root Cause				FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER :											

Picklist Print

Wednesday, January 04, 2017 11:33:53 AM

Page 1

Work Order ID: 154964

154964

Parent Item: 646.3810

646 3810

Parent Item Name: Bracket

Start Date: 1/9/2017

Required Date: 1/16/2017

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP REV:A NEW ISSUE 12-10-22 JLM VERIFIED:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6A1.00X0.75X 0.125X0.060		Purchased	No			110	f	11.4301	0.1375	0.6875			

***M7075T6A1 00X0 75X0 125X0**

7075T6 ANGLE 1.0" X .75" X .125" X .060"W

17-03-21

Location

MAT051

Loc Qty

11.4301

Loc Code

11.4301 ~~3-0881~~

~~123947~~

mox

⇒ 129347

⇒ 137084

7.7541 ^{ft}

10.542 ^{ft}

(6.56 M137084)
already pulled

*See
also 162115*

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03697				SHEET 1 OF 1	
	DWG NO. 646.3800	REV: N/C	PREPARED BY B. PETERS	DATE: 11/14/12	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: BRACKETS					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>David Barber</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: ADDED ALTERNATE MATERIAL.				ECR: D-12-006	

IS

1 PRIMARY MATERIAL: 7075-T651 ALUMINUM PER AMS-QQ-A-250/12.
ALTERNATE MATERIAL: 7075-T6511 ALUMINUM PER AMS-QQ-A-200/11.

SHEET 1, ZONE A2 IS:

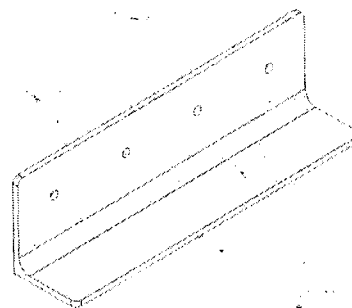
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 154964 *ML5*
17-01-04

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED: ☐ RFMS ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM					CHANGE CATEGORY ☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED ☐ YES ☒ NO

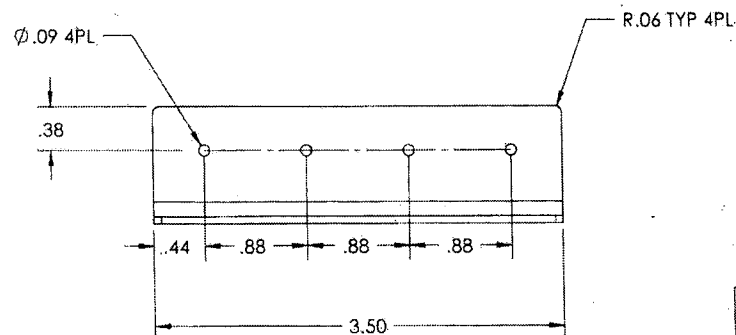
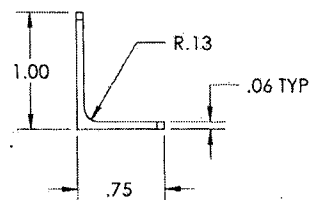
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

NOTES:

1. MATERIAL: ALUMINUM 7075-T651 AMS-QQ-A-250/12
2. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120



646.3810



UNINCORPORATED ECU(2)

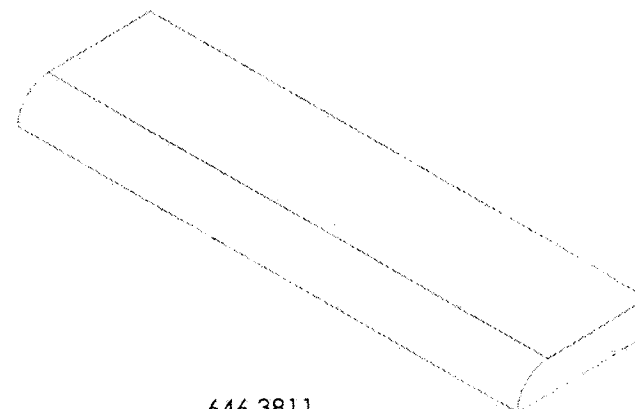
03697

		646.3814	WIPER BRACKET	△	△
		646.3813	STRUT BRACKET	△	△
		646.3812	GUSSET BRACKET	△	△
		646.3811	RADIUS BLOCK	△	△
		646.3810	BRACKET	△	△
	QTY	FIND #	PART #	DESCRIPTION	MATL SPEC.
	QTY			PARTS LIST	
	NEXT ASSY (S)			APICAL INDUSTRIES	
	646.4000			2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300	
		ORIGINAL DATE 08-19-00			
		DRAWN BY J. GARDNER	CHECKED BY J. PARSONS		
		APPROVED BY [Signature]			
		DRAWINGS APPROVED BY CRAVO DE PAIVA			
		CONTRACT NO.		BRACKETS	
		UNLESS OTHERWISE SPECIFIED			
		DRAWING IS A 2D MODEL			
		3 PLACE DECIMALS 2 SIG			
		ANGLES 3.0°			
			SHEET 1 OF 3	DATE CODE DWG NO.	REV
			E 07/12/00	646.3800	N/C
			SCALE NONE		
				SHEET 1 OF 3	

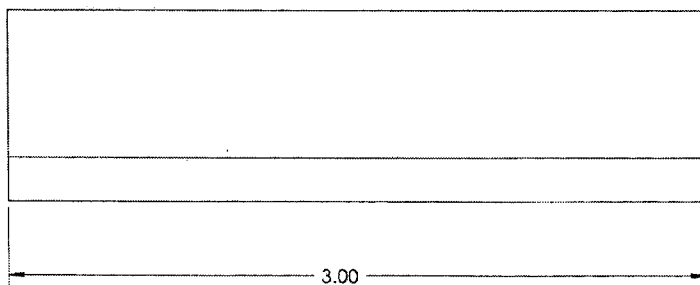
74

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES AND REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISION			
REV	DESCRIPTION	DATE	APPROVED



646.3811



3.00



R.19

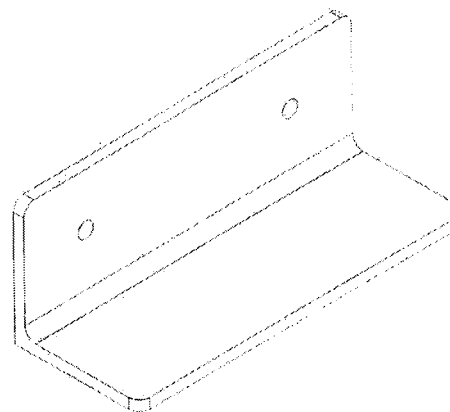
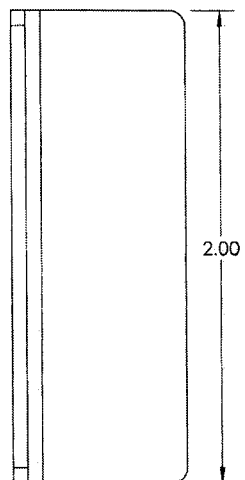
.81

.19

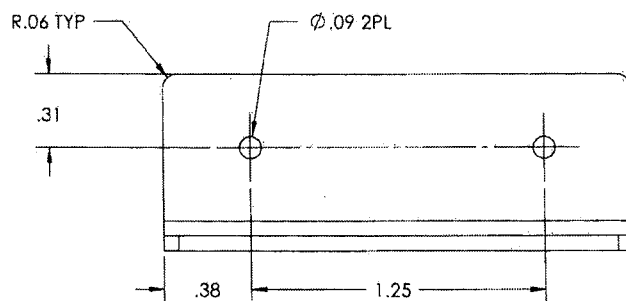
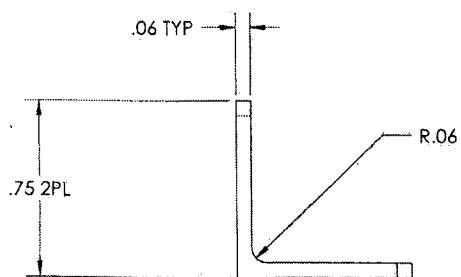
NEXT ASSY (S)		ORIGINAL DATE 10/01/08	08-19-08
DRAWN BY J. GARDNER	CHECKED	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL			
CONTRACT NO.		BRACKETS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.005 3 PLACE DECIMALS ±.002 ANGLES ±.5°		SHEET 02 OF 05 R 07M26	DWG. NO. 646.3800 REV N/C
SCALE NONE		SHEET 2 OF 5	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES AND REPRODUCTION IN WHOLE OR PART WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



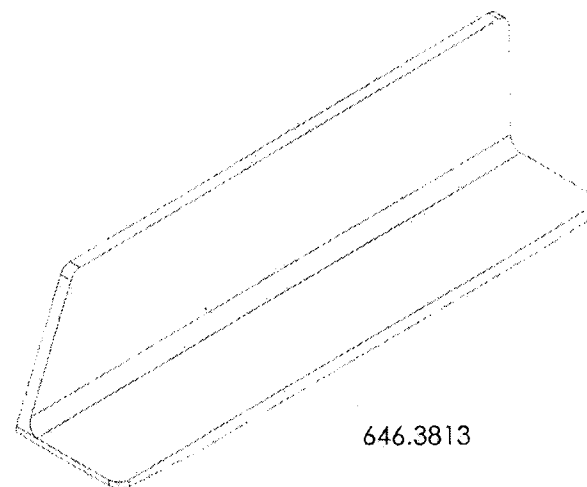
646.3812



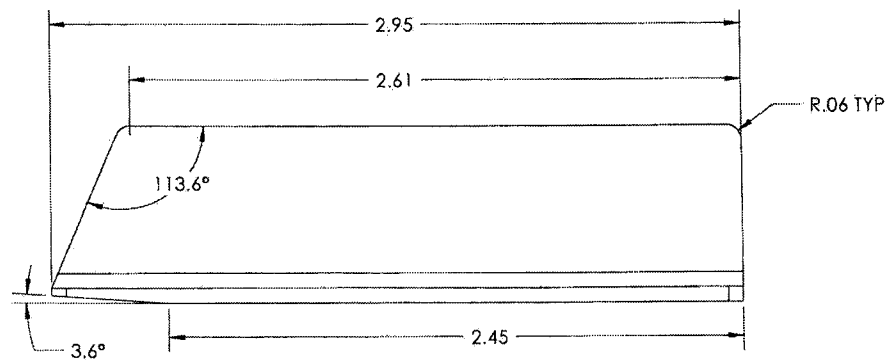
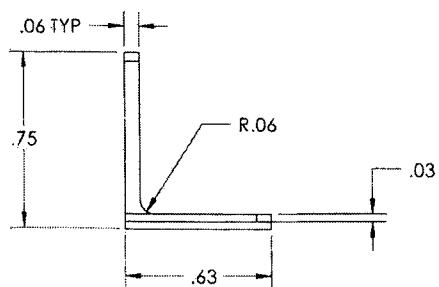
NEXT ASSY. (S)	ORIGINAL DATE 05-19-08		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		
	DRAWN BY JGARDNER				
	CHECKED BY				
	DRAWING APPROVAL				
CONTRACT NO.			BRACKETS		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. DIMENSIONS ARE: 2 PLACE DECIMALS ±.010 3 PLACE DECIMALS ±.005 ANGLES ± 3°					
REV	PAOR CODE	QWTS. NO			REV
B	07M16	646.3800			N/C
SCALE NONE			SHEET	3 OF 3	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



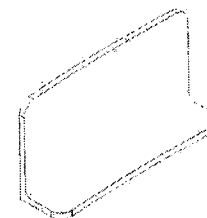
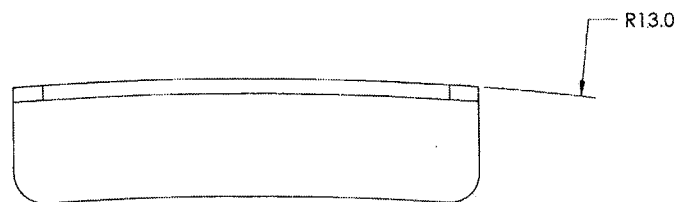
646.3813



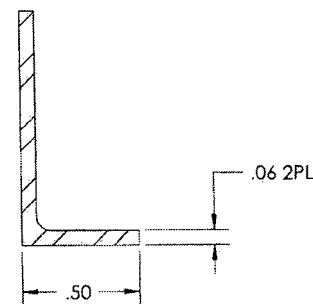
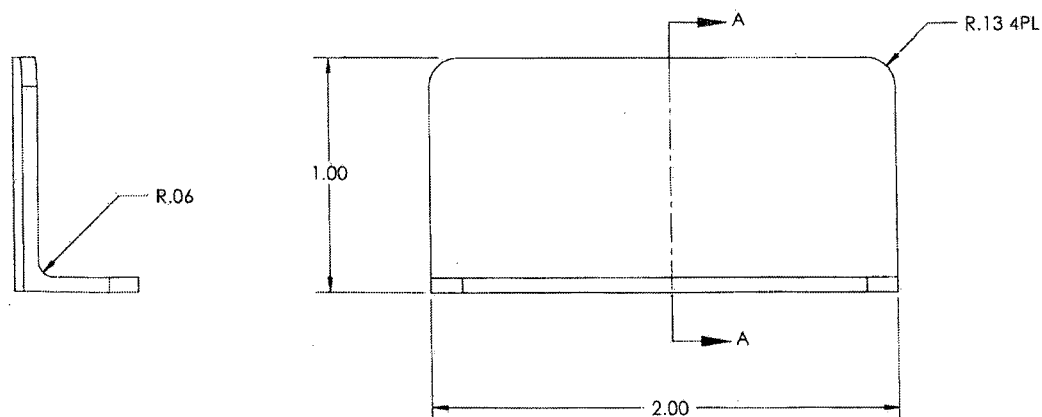
NEXT ASSY (S)	ORIGINAL DATE	08-10-08	APICAL INDUSTRIES	
	DESIGNED BY	CHECKED		
	DESIGNED BY	CHECKED	2608 TEMPLE HEIGHTS DR.	
	DESIGNED BY	CHECKED	OCEANSIDE, CA 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ±.010 ANGLES ±.5°	CONTRACT NO.		BRACKETS	
	DOW NO.		646.3800	
	SCALE		NONE	
	SHEET		4 OF 5	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED

REVISION			
REV.	DESCRIPTION	DATE	APPROVED



646.3814



SECTION A-A

NEXT ASSY (S)		DATE	03-19-05
DESIGNED BY	CHECKED		
DRAWN BY	J. GARDNER		
OFF-WORKS APPROVAL			
COWRAC (S)			
INFORM OTHERS OF SPECIFIED			
DIMENSIONS ARE IN INCHES			
TOLERANCES ARE:			
2 PLACE DECIMALS ± .010			
3 PLACE DECIMALS ± .005			
ANGLES ± .5°			
		SCALE	NONE
		SHEET	5 OF 5

APICAL INDUSTRIES			
2608 TEMPLE HEIGHTS DR.			
OCEANSIDE, CA. 92056-3512 (760) 724-5300			
BRACKETS			
SIZE	CAGE CODE	QWG TAG	REV
B	07126	646.3800	N/C

Jean Francois Sauve

From: Jacob Becker
Sent: March-23-17 11:48 AM
To: Jean Francois Sauve
Subject: RE: 646.3810

I do not think it affects the fit or function of the part, so it is acceptable.

-Jacob

From: Jean Francois Sauve
Sent: Thursday, March 23, 2017 5:49 AM
To: Jacob Becker <JBecker@dartaero.com>
Subject: RE: 646.3810

Hi Jacob,

The rads. are at R0.156" finally, my mistake.

Are they still acceptable?

J-F.

From: Jacob Becker
Sent: March-22-17 1:41 PM
To: Jean Francois Sauve <jfsauve@dartaero.com>
Cc: Pablo Bravo <pbravo@dartaero.com>
Subject: RE: 646.3810

Hi JF,

This is acceptable.

-Jacob

From: Jean Francois Sauve
Sent: Tuesday, March 21, 2017 11:23 AM
To: Jacob Becker <JBecker@dartaero.com>
Cc: Pablo Bravo <pbravo@dartaero.com>
Subject: 646.3810

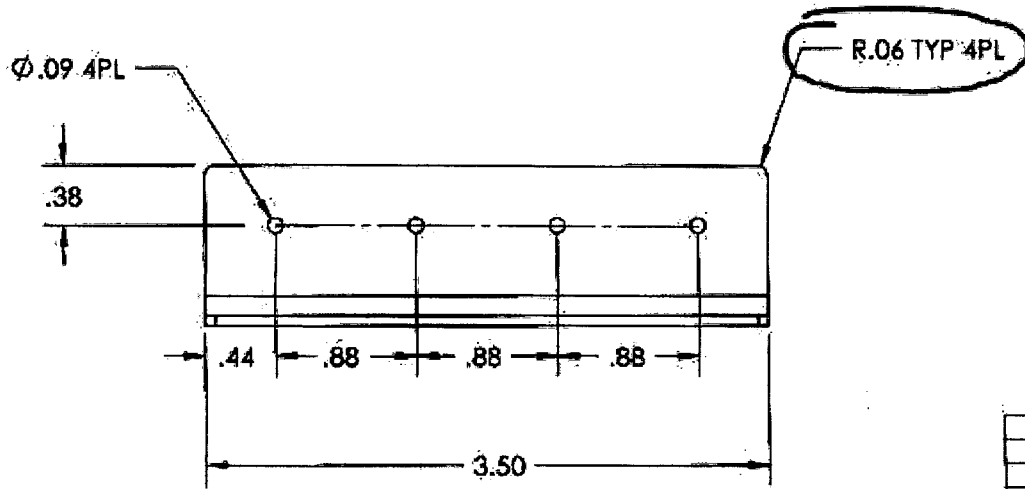
Hi Jacob,

I would need a dwg. deviation for dim. circle below.

Current dim. is R0.125", 20 parts are affected. Is it acceptable?



646.3810



Thanks

JEAN-FRANÇOIS SAUVÉ
Production Engineering Coordinator

DART AEROSPACE
T 1 613 632-5200 > 237
F 1 613 632-5246
1 800 556- 4166
www.dartaerospace.com





Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36731

Purchase Order Date 6/16/2017

PO Print Date 6/28/2017

Page Number 11 of 16

Order From :

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

VC-ATG001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 613-446-4544

Ship To Contact

Ship To Phone

Ship Via: VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

24 162115 ✓ 646.3810 BRACKET 7/21/2017
REV. N/C

Yes

7/21/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N

20.00

\$6.55

\$131.00

Line Total:

\$131.00

25 162147 646.3810 BRACKET 7/21/2017
REV. N/C

Yes

7/21/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N

8.00

\$6.55

\$52.40

Line Total:

\$52.40

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

6/28/2017

DAS
38
9-89

817-7-25



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913568

Date: 21-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
20 ea	Part: 646.3810 Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21247	Rev: N/C PO: PO36731 Line: 24	DAS 38 9-89 SP17-7-25
7 ea	Part: 646.3810 Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21248	Rev: N/C PO: PO36731 Line: 25	
10 ea	Part: 646.3811 Radius Block Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21249	Rev: N/C PO: PO36731 Line: 26	
4 ea	Part: 646.9813 Lower Deflector Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0001-.0002" (.1 - .2 mils) per drawing. Job: 21251	Rev: A PO: PO36731 Line: 28	
11 ea	Part: 650.9201 Eyelet Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21251	Rev: A PO: PO36731 Line: 28	
Made in Canada.			



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913568

Date: 21-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	- .9 mils) per drawing. Job: 21255	PO: PO36731	Line: 32
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>21/07/2017</u> Certified Signature: <u>[Signature]</u> Receiver Signature: <u>[Signature]</u> A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
Made in Canada.			